REMARKS

Claims 1-13 are now present in this application.

The Abstract and specification have been amended. Reconsideration of the application, as amended, is respectfully requested.

The specification stands objected to for an informality. In view of the foregoing amendments, this informality should be addressed. Accordingly, reconsideration and withdrawal of any objection to the specification is respectfully requested.

Claims 1-3 and 13 stand rejected under 35 USC 103(a) as being unpatentable over SU et al., U.S. Patent 6,260,941, in view of JUSZKIEWICZ et al., U.S. Patent 6,353,169. This rejection is respectfully traversed.

Claims 4, 5, 8 and 9 stand rejected under 35 USC 103(a) as being unpatentable over SU et al. and JUSZKIEWICZ et al., in view of LI, U.S. Patent 6,276,997. This rejection is respectfully traversed.

Claim 6 stands rejected under 35 USC 103(a) as being unpatentable over SU et al. and JUSZKIEWICZ et al., in view of SANDOVAL, U.S. Patent 6,345,259. This rejection is respectfully traversed.

Claim 7 stands rejected under 35 USC 103(a) as being unpatentable over SU et al. and JUSZKIEWICZ et al., in view of

WEBSTER, U.S. Patent 5,505,090. This rejection is respectfully traversed.

Claim 10 stands rejected under 35 USC 103(a) as being unpatentable over SU et al. and JUSZKIEWICZ et al., in view of SCHMOLKE et al., U.S. Patent 6,333,785. This rejection is respectfully traversed.

Claim 11 stands rejected under 35 USC 103(a) as being unpatentable over SU et al. and JUSZKIEWICZ et al., in view of CHARLES, U.S. Patent 6,335,559. This rejection is respectfully traversed.

Claim 12 stands rejected under 35 USC 103(a) as being unpatentable over SU et al. and JUSZKIEWICZ et al., in view of HINKLE, U.S. Patent 6,190,313. This rejection is respectfully traversed.

With regard to claim 1, it is respectfully submitted that neither SU et al. nor JUSZKIEWICZ et al. teach, disclose or suggest a system for dynamically monitoring a stability of manufacturing equipment processing semi-manufactured products.

The Examiner asserts that "Su et al. teach a system for dynamically monitoring stability of manufacturing equipment (see abstract; col. 4, lines 66-67 and col.5, lines 1-6)..." However, it is respectfully submitted that the abstract of SU et al. teaches "[a] monitoring system monitors a pressure wave developed in the

surrounding ambient environment during inkjet droplet formation" and that, "[d]uring printhead manufacturing, an array of such sensors may be used in quality assurance to determine printhead performance." In Col. 4, lines 66-67 and Col. 5, lines 1-6, for example, SU et al. teaches "[a]n over all goal of the present invention is to provide an inkjet droplet formation monitoring system..."

It is respectfully submitted that SU et al. teaches a system for monitoring printhead performance or inkjet droplet formation. On the other hand, claim 1 of the present invention recites that "a system for dynamically monitoring stability of manufacturing equipment" is provided and "a plurality of semi-manufactured products are processed by the manufacturing equipment." In contrast, the monitored printhead or droplet of SU et al. only makes papers being printed. This is significantly different from the monitored manufacturing equipment processing semi-manufactured products defined in claim 1 of the present invention. The monitoring systems taught by SU et al. and the present invention apply to systems that are significantly different from each other.

It is also respectfully submitted that neither SU et al. nor JUSZKIEWICZ et al. teach, disclose or suggest a process executor and inspection of semi-manufactured products processed by the manufacturing equipment.

The Examiner asserts that SU et al. discloses a system "…comprising: a process executor requesting a plurality of semi-manufactured products processed by the manufacturing equipment to be inspected (col. 21, lines 6-9 and lines 24-26)…" In contrast, Col. 21, lines 6-9 and 24-26 of SU et al. actually disclose "[i]n a manufacturing context, the monitoring systems 60, 70, 80, and possibly system 90, may be used to determine printhead performance on the assembly line, for instance in quality inspections" and that, "[o]f course, in some implementations it may be desirable to partially or completely surround the cartridge with sensors for quality inspection tests."

The patent to SU et al. does not teach anything about a process executor or how a process executor implements the quality inspections. Additionally, according to the portions of the specification and abstract of SU et al. discussed above, the inspected object is the pressure wave developed in the surrounding ambient environment during inkjet droplet formation. However, claim 1 of the present invention specifically discloses "a process executor requests a plurality of semi-manufactured products processed by the manufacturing equipment to be inspected." The inspection is requested by a process executor and implemented on the semi-manufactured products processed by the manufacturing equipment.

Accordingly, the inspected pressure wave taught by SU et al. is significantly different from the inspected semi-manufactured products taught in claim 1 of the present invention, for example. The inspections taught by SU et al. and the present invention apply to systems that are significantly different from each other.

It is also submitted that neither SU et al. nor JUSZKIEWICZ teach, disclose or suggest a sampling rate at which the semi-manufactured products are inspected.

The Examiner asserts that SU et al. discloses a process executor requesting a plurality of semi-manufactured products processed by the manufacturing equipment to be inspected "at a first sampling rate (col. 17, lines 35-37)…" In contrast, col. 17, lines 35-37 of SU et al. actually teaches that, "[a]lternatively, the preferred minimum sampling rate for an audio range monitoring system needs to be at the Nyquist frequency…" The sampling rate taught by SU et al. is one for the inspection of the acoustic pressure wave. On the other hand, the sampling rate taught by the present invention is one for the inspection of semi-manufactured products, which significantly differs from the teachings of SU et al.

It is also submitted that neither Su nor JUSZKIEWICZ teach, disclose or suggest a data processor analyzing the inspection

results from the process executor to determine a second sampling rate.

The Examiner asserts that SU et al. teaches "...a data processor analyzing the inspection results from the process executor to determine a second sampling rate (col. 17, lines 35-45)..." In contrast, col. 17, lines 35-45 of SU et al. actually teach that:

> "[a]lternatively, the preferred minimum sampling rate for an audio range monitoring system needs to be at the Nyquist frequency, that is, at least twice the band width of the frequency of interest being measured to avoid aliasing, i.e. mixing of low and high frequency components. For instance, if a 6 kHz pressure wave was measured, then the optimal sampling rate would be at least 12 kHz. If the signal of interest is narrower in bandwidth, the sampling rate may be greatly reduced, which is more efficient. However, the design of the printer electronics 36 may impose an upper limit this sampling rate."

Significantly, SU et al. is completely devoid of any teachings or suggestion of a data analyzer, a process executor, or how a data analyzer and process executor cooperate to determine a second sampling rate, as disclosed in independent claim 1 of the present invention, for example.

It is also respectfully submitted that neither SU et al. nor JUSZKIEWICZ et al. teach, disclose or suggest a device storing the second sampling rate.

The Examiner asserts that SU et al. teaches "...a device storing the second sampling rate (col. 25, lines 28-38)..." In contrast, col. 25, lines 28-38 of SU et al. actually teach that:

> "[I]n an advanced printhead/printing mechanism combination, this printhead performance information may be recorded on an electronic integrated circuit on-board the cartridge 50, 52 for later reading by the printer controller 36, which in response thereto adjusts the print modes or firing sequence accordingly to mask the nozzle defect. For example, this information may be stored in a ROM (read only memory) or other equivalent storage device on-board the cartridge, which for example, may be incorporated into the silicon substrate 110, or in communication with the substrate."

Accordingly, SU et al. only teaches that the printhead performance information may be stored in an IC, ROM or other storage device. SU et al. does not teach that the printhead performance information includes a sampling rate. However, independent claim 1 of the present invention, for example, specifically defines "a device storing the second sampling rate."

Accordingly, for the reasons noted above, it is respectfully submitted that the system for dynamically monitoring stability of manufacturing equipment as disclosed in independent claim 1 and its dependent claims is neither taught nor suggested by SU et al. or the secondary references relied upon by the Examiner. Reconsideration and withdrawal of the 35 USC 103(a) rejection is therefore respectfully requested.

With regard to the rejection of claims 4-12, it is noted that the Examiner has rejected each of these claims with combination of an additional cited references, using the reason that:

> "it would have been obvious to include the teaching of……. in the combination of Su and JUSZKIEWICZ in order **to provide a better system for dynamically monitoring stability of manufacturing equipment.**"

The same motivation of the combinations "to provide a better system for dynamically monitoring stability of manufacturing equipment" is hindsight. These rejections should be maintained only by providing correct motivations.

Accordingly, reconsideration and withdrawal of all objections and rejections are respectfully requested. Favorable reconsideration and an early Notice of Allowance are earnestly solicited.

In the event that any outstanding matters remain in this application, the Examiner is invited to contact the undersigned at (703) 205-8000 in the Washington, D.C. area.

Attached hereto is a marked-up version of the changes made to the application by this Amendment.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made

(Rev. 02/20/02)

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE ABSTRACT OF THE DISCLOSURE:

The Abstract of the Disclosure has been amended as follows:

--ABSTRACT OF THE DISCLOSURE

A system for dynamically monitoring the stability of manufacturing equipment [comprises] including a process executor requesting a plurality of semi-manufactured products processed by the manufacturing equipment to be inspected at a first sampling rate and receiving a plurality of inspection results, a data processor analyzing the inspection results from the process executor to determine a second sampling rate, a storage device storing the second sampling rate, and a controller receiving the second sampling rate from the storage device and changing the first sampling rate of the inspection requested by the process executor to the second sampling rate.--

IN THE SPECIFICATION:

A paragraph has been added after the paragraph ending on page 3, line 6.

The paragraph beginning on page 3, line 9, has been amended as follows:

--The following detailed description, given by way of example and not intended to limit the invention solely to the embodiments described herein, will best be understood in conjunction with the accompanying drawings, which are given by way of illustration only, and thus are not limitative of the present invention, and in which:--

The paragraph beginning on page 3, line 20, has been amended as follows:

--FIG. 1 is a diagram showing a system for dynamically monitoring stability of manufacturing equipment according to one embodiment of the invention. A system 1 comprises a MES 11, [an] a Statistical Process Control (SPC) database and analyzer (a software application) 12, a sampling rate database 13, an input device 131 and a display 132 connected to the sampling rate database 13, and a server 14.--